

Appendix A

Autoimmune disease

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Autoimmune diseases arise from an overactive immune response of the body against substances and tissues normally present in the body. In other words, the body attacks its own cells. This may be restricted to certain organs (e.g. in thyroiditis) or involve a particular tissue in different places (e.g. Goodpasture's disease which may affect the basement membrane in both the lung and the kidney). The treatment of autoimmune diseases is typically with immunosuppression—medication which decreases the immune response.

Autoimmune diseases Classification and external resources

ICD-9	279.4
OMIM	109100
DiseasesDB	28805
MedlinePlus	000816
MeSH	D001327

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Occurrence and onset

Nearly 79% of autoimmune disease patients in the USA are women. Symptoms tend to appear during or shortly after puberty. It is not known why this is the case, although hormone levels have been shown to affect the severity of some autoimmune diseases such as multiple sclerosis.^[1] Other causes may include the presence of fetal cells in the maternal bloodstream, i.e. microchimerism.^[2]

Autoimmune diseases

It is possible to classify autoimmune diseases by corresponding type of hypersensitivity: type II, type III, or type IV. (No type of autoimmune disease mimics type I hypersensitivity.)^[3]

Name 	Accepted/suspected 	Hypersensitivity 	Autoantibody
Acute disseminated encephalomyelitis (ADEM)	Accepted ^[4]		
Addison's disease	Accepted ^[4]		
Alopecia areata	Accepted ^[4]		
Ankylosing spondylitis	Doubtful ^[4]		
Antiphospholipid antibody syndrome (APS)	Accepted ^[4]		
Autoimmune hemolytic anemia	Accepted ^[5]	II	Anti-Smooth Muscle Actin
Autoimmune hepatitis	Accepted ^[4]		

Autoimmune inner ear disease	Suspected ^[6]		
Bullous pemphigoid	Accepted ^[5]	II	Anti-Bullous Pemphigoid Antigen 1 and 2 (Hemidesmosome antigens)
Coeliac disease	Accepted ^{[7][8][9]}	IV??	Anti-transglutaminase
Chagas disease	Suspected ^[10]		
Chronic obstructive pulmonary disease	Suspected ^{[11][12]}		
Crohns Disease (one of two types of idiopathic inflammatory bowel disease "IBD")	Accepted ^[4]	IV	
Dermatomyositis	Accepted ^[13]		
Diabetes mellitus type 1	Accepted ^[4]	IV	
Endometriosis	Suspected ^[14]		
Goodpasture's syndrome	Accepted ^[4]	II	Anti-Basment Membrane Collagen Type IV Protein
Graves' disease	Accepted ^[4]	II	
Guillain-Barré syndrome (GBS)	Accepted ^[4]	IV	Anti-ganglioside
Hashimoto's disease	Accepted ^[4]	IV	
Hidradenitis suppurativa	Suspected ^[15]		
Kawasaki disease	Suspected		
IgA nephropathy	Suspected		
Idiopathic thrombocytopenic purpura	Accepted ^[4]	II	
Interstitial cystitis	Suspected ^[16]		
Lupus erythematosus	Accepted ^[4]	III	
Mixed Connective Tissue Disease	Accepted ^[4]		
Morphea	Suspected ^[17]		
Multiple sclerosis (MS)	Accepted ^[4]	IV	Anti-Myelin Basic Protein
Myasthenia gravis	Accepted ^[4]	II	
Narcolepsy	Suspected ^[18]		
Neuromyotonia	Suspected ^[19]		
Pemphigus Vulgaris	Accepted ^[4]	II	Anti-Desmoglein 3
Pernicious anaemia	Accepted ^[20]	II	
Polymyositis	Accepted ^[13]		
			Anti-p62, Anti-sp100, Anti-

Primary biliary cirrhosis	Accepted ^[21]		Mitochondrial(M2)
Rheumatoid arthritis	Accepted ^[4]	III	Rheumatoid factor
Schizophrenia	Suspected ^[22] [23][24]		
Scleroderma	Suspected ^[17]		Anti-topoisomerase
Sjögren's syndrome	Accepted ^[4]		
Stiff person syndrome	Suspected		
Temporal arteritis (also known as "giant cell arteritis")	Accepted ^[4]	IV	
Ulcerative Colitis (one of two types of idiopathic inflammatory bowel disease "IBD")	Accepted ^[4]	IV	
Vasculitis	Accepted ^[5]	III	
Vitiligo	Suspected ^[25] [26]		
Wegener's granulomatosis	Accepted ^[27]		Anti-neutrophil cytoplasmic (cANCA)

Development of therapies

In both autoimmune and inflammatory diseases the condition arises through aberrant reactions of the human adaptive or innate immune systems. In autoimmunity, the patient's immune system is activated against the body's own proteins. In inflammatory diseases, it is the overreaction of the immune system, and its subsequent downstream signaling (TNF, IFN, etc), which causes problems.

A substantial minority of the population suffers from these diseases, which are often chronic, debilitating, and life-threatening. There are more than eighty illnesses caused by autoimmunity. It has been estimated that autoimmune diseases are among the ten leading causes of death among women in all age groups up to 65 years.^[28]

Currently, a considerable amount of research is being conducted into treatment of these conditions. According to a report from Frost & Sullivan, the total alliance payouts in the autoimmune/inflammation segment from 1997 to 2002 totaled \$489.8 million, where Eli Lilly, Sunovion, Procter & Gamble, Encysive, and Novartis together account for 98.6 percent of alliance payouts.^[29]

References

- [^] "A Gender Gap in Autoimmunity". <http://www.sciencemag.org/feature/data/983519.shl>. Retrieved on 2007-10-19.
- [^] "JAMA -- Abstract: Microchimerism: An Investigative Frontier in Autoimmunity and Transplantation, March 3, 2004, Adams and Nelson 291 (9): 1127". <http://jama.ama-assn.org/cgi/content/abstract/291/9/1127>. Retrieved on 2007-10-19.
- [^] Parham, Peter (2005). *The immune system*. New York: Garland Science. pp. 344. ISBN 0-8153-4093-1.
- [^] *a b c d e f g h i j k l m n o p q r s t u v* MeSH *Autoimmune+Diseases*

28. ^ Noel R. Rose and Ian R. MacKay, "The Autoimmune Diseases" fourth edition
29. ^ Frost & Sullivan Report, "Antibody Technology Developments" September 2005

External links

- Auto-immune disorders at the Open Directory Project
- Links to pictures of Autoimmune Diseases (Hardin MD) at University of Iowa

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Categories: Immune system disorders | Autoimmune diseases

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